

## ABSTRACT OF THE DISCLOSURE

A  $P^{++}$ -type first diffusion layer is formed by diffusing P-type impurities on a front side of an  $N^-$ -type semiconductor substrate, and an N-type fourth diffusion layer which is shallower than the first diffusion layer is formed by diffusing N-type impurities on the front side, and a P-type second diffusion layer is locally formed in a ring-shape so as to be exposed on the lateral side by diffusing P-type impurities on the back side, and P-type impurities are diffused on the back side of the substrate and a  $P^+$ -type third diffusion layer is locally formed so as to be distributed inward from the second diffusion layer and not to be exposed to the lateral side, and the P-type second diffusion layer and the  $P^+$ -type third diffusion layer are formed in the two-stage structure, thereby various characteristics can be improved.